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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,957	07/07/2003	Shunichi Numazaki	239592US2RDDIV	4757

22850 7590 07/14/2005

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER
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DIEP, NHON THANH

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/612,957	Applicant(s) NUMAZAKI ET AL.	
	Examiner Nhon T. Diep	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2005.  
 2a) ☒ This action is **FINAL**.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 16-30 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☐ Claim(s) 16-22, 24, 25 and 27-30 is/are rejected.  
 7) ☒ Claim(s) 23 and 26 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 07 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☒ Certified copies of the priority documents have been received in Application No. 09/146,957.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16-22, 24-25 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper (US 6,150,930).

Cooper discloses a video equipment and method to assist motor vehicle operators comprising the same imaging apparatus comprising: a casing including an optical filter; a plurality of light sources in the casing (Fig. 2, el. 22, 26), each configured to emit an invisible light to be reflected by an object (col. 6, ln. 25: infrared headlights); and a two dimensional image sensor in the casing covered by the light sources on both ends and configured to receive the reflected invisible lights from the object through the optical filter (fig.5, el. 34, fig. 2, el. 22-26-32-26-22), wherein the optical filter selectively transmits the invisible light and blocks a visible (fig. 4b, col. 4, ln. 17-31, specifically ln. 29-31: a gel selected for only short wavelength infrared radiation) as specified in claims 16 and 19; wherein the light sources are infrared LEDS (Infrared illuminator 26) as specified in claims 17 and 20; wherein the two dimensional image sensor is a CCD image sensor (col. 3, ln. 53-57) as specified in claims 18 and 21. It is noted the Cooper does not particularly disclose that:

a. the plurality of light sources surrounds the two dimensional image sensor as specified in claims 16 and 19;

b. a control mechanism configured to control the CCD image sensor to generate a first image when the light sources are emitting the invisible lights and a second image when the light sources are not emitting the invisible lights ( ) as specified in claims 22 and 25; and

c. wherein the light sources are arranged symmetrically around the image sensor; the number of the light sources is more than or equal to 3 (fig. 3) ; and the light sources are arranged symmetrically about the center of the two dimensional image sensor as specified in claims 24 and 27-30.

With regard to a and c: Meltzer teaches the ring shape light system surrounds a camera (fig. 3) and therefore, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to modify the system of Cooper by providing more light sources to not only cover both ends of the camera but other direction as well as taught by Meltzer. Doing so would help to better provide reflection to the camera.

With regard to b: Even though, Cooper does not particularly disclose a control mechanism configured to control the CCD image sensor to generate a first image when the light sources are emitting the invisible lights and a second image when the light sources are not emitting the invisible lights, it is noted that Cooper further discloses two separate circuit to generate a visible light video signal and infrared signal from the same sensor (sensor 34) and that both of these signals are directed to multiplexer which rapidly switches between the two signals to provide a composite video output (fig. 6, col.

5, ln. 64 – col. 6, ln. 4) regardless of the kinds of light sources are emitting. And therefore, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to modify the system of Cooper by only generate a first image when the light sources are emitting the invisible lights and a second image when the light sources are not emitting the invisible lights. Doing so would help to save power when emitting infrared light sources.

***Allowable Subject Matter***

1. Claims 23 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The various cited prior art of record does not anticipate or render obviousness the feature wherein an image of the external object is generated from a difference between the first image and the second image as specified in claims 23 and 26.

***Conclusion***

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Bourn et al (US 6,554,452) discloses a machine-vision ring-reflector illumination system and method.


b. Lieberman et al (US 6,102,556) discloses a detachable light filter holder.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhon T. Diep whose telephone number is 571-272-7328. The examiner can normally be reached on m-f.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ND  
7/11/2005

  
**NHON DIEP**  
**PRIMARY EXAMINER**